MILBANK MEMORIAL FUND

QUARTERLY BULLETIN

NEW YORK HEALTH DEMONSTRATIONS

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THE FOURTH NEW YORK HEALTH CONFERENCE

held in connection with the

Seventh Annual Meeting of the Advisory Council

CONTRIBUTIONS which the New York Health Demonstrations have made to modern public health knowledge and practice were considered by over three hundred physicians, health and social workers who attended the two-day health conference, held in New York on March 14th and 15th in connection with the annual dinner meeting of the boards of counsel of the Milbank Memorial Fund with its Board of Directors. For the fourth successive year seven national, state, and local health organizations, official and voluntary, joined in sponsoring the meeting, the group including the United States Public Health Service; the Departments of Health of the State and City of New York; the Med-

ical Society of the State of New York; the Milbank Memorial Fund; the State Charities Aid Association; and the Community Health Council of the Bellevue-Yorkville Health Demonstration.

The value of county health departments; progress to date in the campaign being conducted in New York State to immunize children against diphtheria; the need for full-time county and city health officers; improved health instruction for school children; extension of public health nursing service; community health organization—these and many other subjects were discussed by over thirty speakers.

CURRENT advances in public health work in New York State were evaluated, placed in historical perspective and related to established standards by experts in the fields of education, research, medicine and public health administration at the sessions of the fourth annual New York Health Conference. More than 300 individuals associated with organizations engaged in local, state, and national health work attended the Conference. ¶ The opening day of the sessions, which are briefly reviewed here, was devoted by members of the boards of counsel of the Milbank Memorial Fund to the discussion of problems confronted in the New York Health Demonstrations.

The addresses at the dinner meeting of the boards of counsel of the Fund were devoted to the discussion of the relationship of the practicing physician to the public health movement, the topics including the historical development of the relation between the practice of medicine and public health; the effect of the public health program upon the interests of the medical profession; the influence of research in bringing into closer relationship the practice of

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medicine and public health activities; and the future coordination of public health and the practice of medicine.

Edward W. Sheldon, president of the Fund's Board of Directors, welcomed the members of the Advisory Council and the other guests. Mr. Sheldon briefly reviewed the fundamental purposes of, and current progress in, the New York Health Demonstrations. "We are extremely grateful for this splendid organization with its strong enlistment of governmental authority, of private agencies and of community interest," he said. "We want to go on with it. We feel that so far it represents something of the spirit which animated Mrs. Anderson's life of human betterment. I like to feel that we are carrying out what would have met her cooperative approval. I like also to feel that the spirit which animated her life has something of a reflection in the work that we are doing now. I remember hearing Senator Root at a hospital anniversary several years ago say that the men and the women throughout this broad land of ours who are devoting themselves to the cause of human benefit are saving the soul of America."

Owing to the illness of Dr. William H. Welch, chairman

THE unreliability of crude statistical data has again been illustrated in Cattaraugus County, where studies by the Fund's research division emphasize the necessity of taking into account the residence of mothers and of decedents in obtaining accurate birth and infant mortality rates. The article beginning on page 41 presents a summary of these investigations which, we believe, are the first to attempt to refine crude data of this character, coming from a rural community. ¶ The complete study of birth rates will appear in the *Journal of the American Statistical Association* and that of infant mortality rates, in the *American Journal of Public Health*.

of the Fund's Advisory Council, Dr. Linsly R. Williams acted as presiding officer of the meeting. Dr. Williams traced the past development of the relation between the practice of medicine and public health and discussed the need for greater coordination between official and lay public health and medical groups in bringing about a mutual understanding between these groups.

Dr. James Alexander Miller, professor of clinical medicine, College of Physicians and Surgeons, Columbia University, spoke on "the effect of the public health program upon the interest of the private physician." In part, he said,

"Although the evidence is conflicting, it is perhaps fair to admit that with the changing conditions of modern medical practice, of which the development of preventive medicine forms an important part, the financial return to individual practitioners has probably diminished in not a few instances.

"If this represents merely a temporary period of adjustment to a situation which is essentially sound and beneficial to the community as a whole, it is not a matter of serious concern. Similar instances in other phases of economic life are common enough in the rapid development of modern conditions.

"If, on the other hand, the conditions imposed are unfair and unjust to a group so essentially important in a public health program as is the medical profession, the community should not only be interested but disturbed.

"It is surely true that we cannot do without the physician. Their training makes them the logical backbone of a public health program. The leaven in this direction is already working from within the profession itself. Let us recognize and

encourage this fact, rather than condemn the profession as a whole because of the more loudly articulate minority."

Dr. Theobald Smith, chairman of the Fund's advisory committee on bovine tuberculosis, discussed the influence of research in bringing into closer relationship the practice of medicine and public health activities.

"It has always been difficult to appraise the value of preventive work," he said. "The surgeon who successfully deprives a patient of some recalcitrant organ receives more attention than one who discovers an infection of drinking water in time to avert an epidemic. The countless casualties and catastrophes that do not happen as the result of anticipatory activities of preventive medicine would make fairy stories ordinary reading. They, however, have only a negative value in stimulating the appreciation of the public. To value prevention demands a sixth sense acquired only by a few. The highest achievement of civilized society is to be able to predict and prophesy and thereby control the immediate future.

"Demonstrations are helpful in that they, in addition to their primary task, permit some light to play on the economic problems of disease. Though the physician sees them in the intimacy of the household, he has neither the time nor the means to bring his observations as a whole into the open and invite inferences and conclusions useful to the community. This the demonstrations may do if the accumulating material warrants it. It is the demonstration that is most prepared to tell from its special researches in what directions surplus means and energy may be spent with maximum returns in health to the community. Finally, without the voluntary activities of lay groups entering the field of public health and these demonstrations which bring an entire population under the influence, spiritual and physical, of health principles, it

would be well-nigh impossible to stimulate the interest of the public and create a so-called public opinion, which in the last resource is our dependence in assisting the inert mass of tradition, medical, legal, and lay, to move a step forward."

One of the sessions of the general conference was devoted to the reviewing of the services of the Cattaraugus County Health Demonstration from the point of view of their adequacy and of the possibility of measuring the results of their work. Dr. Charles J. Hatfield, executive director of the Henry Phipps Institute, who presided, said that the results of the New York Health Demonstrations are of immense importance to the whole nation. The demonstrations are concerning themselves with the development of services for the prevention and control of communicable diseases and of technique for measuring their effectiveness, he continued. They have sought and are seeking to ascertain whether what is known of preventive medicine and sanitary science can be applied adequately and effectively in these particular communities as a demonstration for the benefit of other communities, believing that the answer to this question is of immense importance to public health everywhere.

Dr. Reginald M. Atwater, health officer of Cattaraugus County, traced the health benefits derived by individuals typical of the various age groups from infancy to manhood during the County's health campaign for the past six years.

Concerning the activities of the Cattaraugus County Board of Health during this period, he said that intensive efforts to find, control and prevent tuberculosis had brought 7,700 persons to the clinics for diagnosis, that more than 11,000 diagnostic examinations had been made, and that, in addition, many hundreds have been encouraged to go to their private physicians for examination. "A consultation service has been provided for physicians," he continued. "Prompt

and accurate sputum diagnosis has been provided in the laboratory. Contacts have been examined and followed up. Sanatorium treatment has been improved, and sanatorium-home treatment has been regularly carried out in suitable cases." In describing the generalized public health nursing service, he said that the 32,000 nursing visits made in the county each year by the nurses attached to the local voluntary and official agencies represent 115 visits per working day or 1.7 annual visits per family.

"If a summary of all the services offered in the County were to be adequately set forth," Dr. Atwater said, "it would be necessary to detail the activities in infant, maternal and child hygiene; communicable disease control; the school medical services; the measures relating to the sanitation of water, milk and foods; the suppression of sanitary nuisances; the maintenance of an adequate laboratory service; the promotion of venereal disease clinics; the accurate recording of vital statistics; and the efforts put forth in health education, in nutrition, in mental hygiene and habit training and in the general enforcement of the laws relating to health."

Edgar Sydenstricker, director of the Fund's division of research, said the 1928 death rate for tuberculosis in Cattaraugus County, "39 per 100,000, was the lowest recorded for the County, and 1928 was the fourth consecutive year in which the rate has been well below any prior annual rate since records were first available in 1900." He reported that the infant mortality rate continues on the relatively low level which has prevailed since 1923. A reduction of approximately 22 per cent in diphtheria cases in the four years 1925-1928 could be attributed to the immunization campaign, he said. His estimate was based on the number of cases of diphtheria that would have occurred among the 10,000 persons immunized in the campaign had the case rate been the same

within this group as it was for the non-immunized population.

Dr. Louis I. Dublin, statistician of the Metropolitan Life Insurance Company, said that the surface of the possibilities in public health work had hardly been scratched, since approximately half the population of the country live in rural districts and a majority of these sections do not have the proper public health facilities. He believes the results achieved in cities can also be obtained in rural sections.

Other speakers discussing various phases of the health activities in Cattaraugus County were Drs. Donald B. Armstrong, Edward R. Baldwin, Lawrason Brown, John A. Ferrell, Eugene L. Opie and William Charles White; and Miss Lillian A. Hudson.

Dr. Shirley W. Wynne, commissioner of health of the City of New York, was presiding officer at a session given over to a discussion of the relationship of medical, educational and social work groups to the Bellevue-Yorkville Health Demonstration. "The public is awakening to the need for information on the prevention of the consequences of existing diseases and defects," said Dr. Wynne. "The outstanding need in every community is efficient medical and dental service for persons of modest incomes." He said that the health education methods applied during the last two years to twenty-five public and parochial schools in the Bellevue-Yorkville district are to be extended to schools in other parts of the City.

Dr. A. K. Aldinger, director of health education of the New York City Board of Education, visioned that the results of health work in the schools would be apparent only in the next generation. Not only would it mean the wiping out of disease in the present school population, he said, but it would result in more regular attendance, and consequently in giving every child the opportunity to complete his educa-

tion more rapidly. He announced that through arrangements with the Bellevue-Yorkville Health Demonstration a training course for teachers of physical education has been organized by the demonstration staff.

The future opportunities of the Bellevue-Yorkville Health Demonstration were discussed by Edward T. Devine, executive officer of the demonstration. Dr. Charles Gordon Heyd, treasurer of the Medical Society of the State of New York, spoke on the "medical contacts of the demonstration," and Miss Marguerite A. Wales, general director of the Henry Street Visiting Nurse Service, read a paper on the "family contacts."

The services of the Syracuse Health Demonstration were discussed by Drs. George C. Ruhland, Walter F. Willcox, C.-E. A. Winslow, Edward R. Baldwin, C. Floyd Haviland, Veranus A. Moore, William H. Park, William F. Snow, Frankwood E. Williams, and Henry C. Sherman, at a session set aside for this purpose, over which George F. Canfield, president of the State Charities Aid Association, presided.

Dr. Ruhland reported on the services of the demonstration, describing among other things, improvement in the gathering of vital statistics, in school medical inspection, in the nursing service and in health education.

"It is gratifying to point out," he said, "that the American Public Health Association's rating for the year 1927 gives Syracuse a score of 899 points out of a possible 1,000—the best on record thus far for cities in its population group. Syracuse has a health service that in organization comforms to present accepted standards of service.

Proper diet may be the means of increasing the span of human life at least 10 per cent, said Dr. Henry C. Sherman, professor of chemistry at Teachers College, in discussing Dr. Ruhland's paper. "From the standpoint of adequacy," he

said, "the ideal would be a bureau of nutrition in every department of health, under an expert acting in an advisory capacity and with a sufficient staff of nutrition workers."

Dr. Hugh S. Cumming, Surgeon General of the United States Public Health Service, presided at a special session to consider how the experience of the New York Health Demonstrations might be made available to other communities. Among other things, he said that organized health demonstrations had attracted such world-wide attention that the League of Nations intends to discuss such experiments at its next meeting in Geneva. "Experts from twenty-one countries have visited the Cattaraugus County demonstration to learn how a maximum of efficiency in sanitation and medicine has checked diphtheria, tuberculosis and other disease," Dr. Cumming said. The part which physicians, health officials and parents should take in raising the standard of community health service, was discussed by Drs. Charles J. Hatfield, William A. Howe, Linsly R. Williams, Herman G. Weiskotten, and Nathan B. Van Etten, and by George J. Nelbach, Bailey B. Burritt, and John A. Kingsbury.

That twenty-eight cities and twenty-two up-state counties in New York State did not have a single death from diphtheria in 1928, was brought out at a luncheon meeting called to consider results in the diphtheria immunization campaign which is being waged in the State. "Results of the anti-diphtheria campaign thus far prove beyond doubt that a community so desiring may rid itself of the disease," Dr. Lee K. Frankel, second vice-president of the Metropolitan Life Insurance Company, asserted.

"The means of eradication are simple," he declared. "They involve immunization of children, particularly pre-school children. The really dangerous ages are from 1 to 5. Fundamentally the campaign is educational. I am convinced

that if in the years 1929, 1930 and possibly 1931, the campaign could be actively prosecuted, diphtheria would be practically eliminated from New York State by 1932."

In pointing out that the death rates in New York City and Buffalo from this disease were exceeding the remainder of the State, Dr. Matthias Nicoll, Jr., State Commissioner of Health, asserted that with the cooperation of the medical profession, the State and local health officials and the non-official agencies, there can be no question but that diphtheria can be eradicated within a reasonable time.

Dr. Shirley W. Wynne charged the prevalence of diphtheria in New York City to the "innocent indifference" of parents. He said last year's 642 deaths and 10,766 cases among children of the City were a reproach to its civic pride.

At forty-eight special diphtheria clinics, 449,796 treatments had been given on seven consecutive Saturdays, he reported. When an average of 2,500 immunizations a week among infants less than one year old has been reached, the disease will be conquered, he predicted. Responsibility for protecting children from diphtheria through immunization rests with physicians and parents, as well as with the official and voluntary health organization, said Dr. Nathan B. Van Etten, chairman of the diphtheria prevention committee of the Medical Society of the State of New York.

The CORRECTION FOR RESIDENCE OF BIRTH AND INFANT MORTALITY RATES *in* CATTARAUGUS COUNTY

*A Summary of Recent Studies made by the Research Division of the Milbank Memorial Fund**

THE increasing number of mothers in rural communities and small villages and towns who go to city hospitals for confinement is a fact of common knowledge. What is not so fully realized is the effect of this changing condition upon the accuracy of officially recorded birth and infant mortality rates in view of the practice, universally followed in the statistical bureaus, of crediting all births and deaths to the places where they occur rather than to the places where the mothers reside.

That this is not merely an academic question for statisticians to ponder over, but is a matter of practical importance to sanitarians who wish to use birth and infant mortality rates accurately, is clearly emphasized by a fairly intensive study in Cattaraugus County, which contains about 40,000 persons ordinarily classified as "rural" and about 30,000 living in towns and cities having a population of 10,000 or more.

The geographical location of a given community in relation to hospital facilities determines to a large extent the degree to which the locally recorded births and deaths are affected by this factor of residence. In Cattaraugus County, the hospitals in Olean provide medical service not only to local residents but also to many residents of nearby rural districts. Since this city is near the eastern and southern lines it is readily accessible to residents of Pennsylvania and of

*Acknowledgments are made to the Cattaraugus County Health Department, especially to Miss Frances King, statistician, for assistance in compiling the data and to the Bureau of Vital Statistics, the New York State Department of Health, for access to the certificates.

Allegany County, as is shown in the accompanying map. On the other hand, residents of northern and western Cattaraugus County find it convenient to go to Buffalo or Jamestown, New York, for hospital care, and some residents in the southern districts go to Bradford, Pennsylvania. Obviously, the official vital statistics for Cattaraugus County are affected in two ways: (1) by the inclusion of non-residents and (2) by the allocation of residents to other localities.

Resident Birth Rates

There has been a steady increase in the number of births to mothers not residents of Cattaraugus County which have been registered in Olean as shown by the figures in the accompanying table. Non-resident births registered in other parts of the County have numbered from 3 to 15 annually. Balanced against these are the births to residents mothers which occurred elsewhere and were officially recorded, therefore, outside the County. The number of resident births recorded in adjoining areas was ascertained by an examination of all birth certificates registered in Allegany, Chautauqua, Erie and Wyoming Counties and in Bradford, Pennsylvania, for the years 1916, 1920, 1925, 1926 and 1927. It was assumed that the number of births to Cattaraugus County mothers occurring in more distant places would be too few to materially affect the birth rates. The non-resident births were deducted from the total number of births registered in the County for each year from 1926 to 1927, and a birth rate for

Births to mothers, not residents of Cattaraugus County, registered at Olean, 1916-1927.

Year	Number of Births	Year	Number of Births
1916	10	1922	31
1917	21	1923	36
1918	23	1924	51
1919	31	1925	57
1920	37	1926	86
1921	43	1927	94

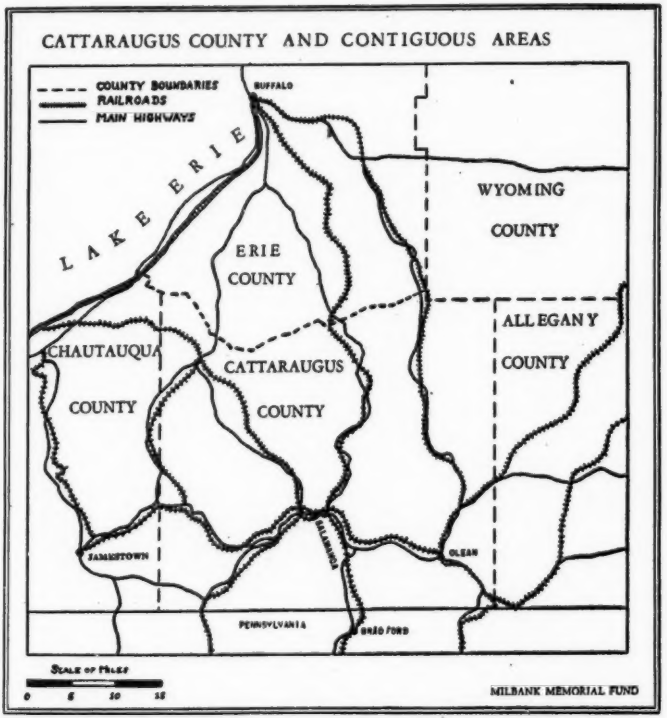


Fig. 1. Map showing accessibility by railways and highways of Cattaraugus County to neighboring cities and of neighboring rural districts to Cattaraugus County cities.

resident births within the County was computed for each year. For the five years noted above, resident births recorded outside the County were added and a *net resident birth rate* was computed. For the years between 1916 and 1920, and the years from 1920 to 1925, the net resident birth rate was estimated on the basis of the difference between the partially corrected and completely corrected rates in the years when both are known.

While correcting the birth rate for non-residents resulted

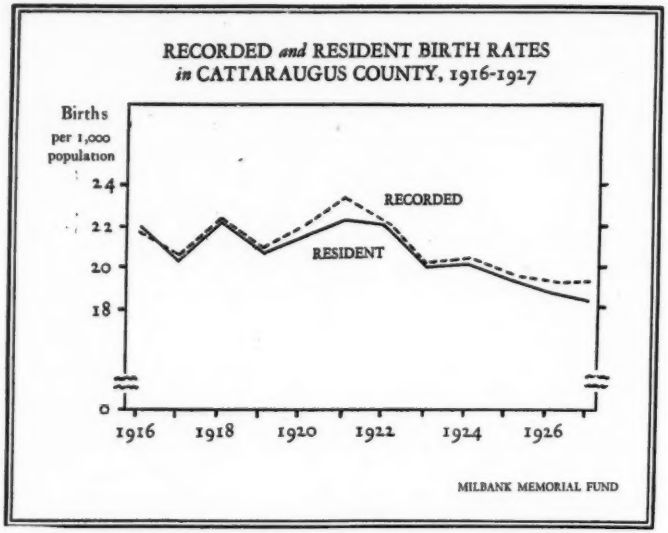


Fig. 2. Officially recorded birth rates in Cattaraugus County compared with the resident rates obtained by deduction of births to mothers who were not residents of the County and the addition of births to Cattaraugus County mothers registered in adjoining areas, 1916–1927.

in a slightly higher rate for Cattaraugus County in 1916, the general result is a reduction in the official birth rate with the exception of 1922 in which year the corrected and uncorrected rates are the same. These differences are shown graphically in Fig. 2. Judging from the divergence in the lines in 1924, 1925, 1926 and 1927, the effect of non-residents upon the birth rate is becoming increasingly important, owing to the fact that the number of non-resident births registered in Cattaraugus County has increased more rapidly than the number of births to Cattaraugus residents in other areas.

The result of the correction of the birth rates for residence is more striking when the urban and rural parts of the County are considered separately as is shown in Fig. 3. Deduction of the non-resident births from the number registered in the

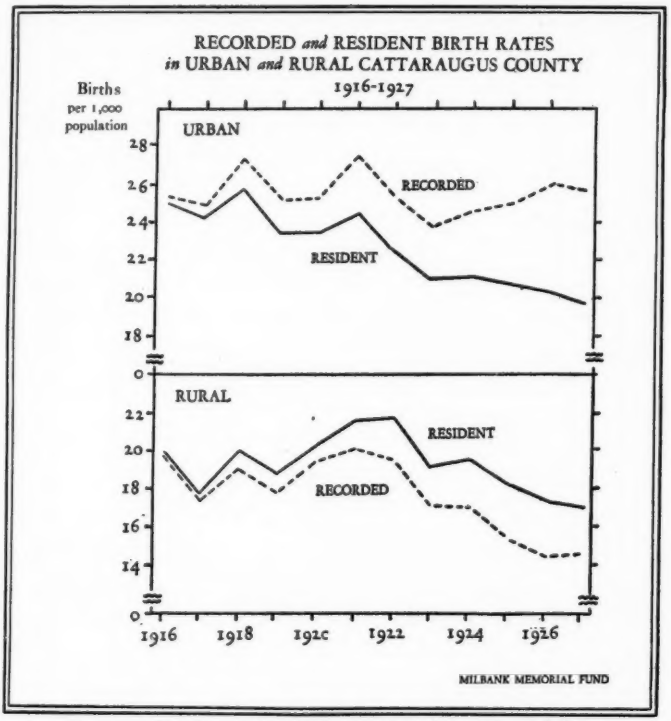


Fig. 3. Officially recorded birth rates in urban and rural Cattaraugus County compared with the resident urban and rural rates obtained by allocation of births to residence of mothers, after deduction of births to non-resident mothers and addition of births to Cattaraugus County mothers registered in adjoining areas, 1916–1927.

urban part of the County (Olean and Salamanca) and the reallocation to the rural part of the County of births to rural mothers who had come to the hospitals in Olean or Salamanca for confinement results in a marked reduction in the urban birth rate as officially recorded. Nearly all the births which were registered outside Cattaraugus County were births to mothers whose place of residence was in the rural area. When these as well as the births to rural mothers

registered in the urban part of the County are added to the recorded rural births, the rural birth rate is greatly increased. The magnitude of the correction of both the urban and rural birth rate steadily increased from 1916 to 1927. In 1927, the urban birth rate is decreased 23 per cent by correction for residence and the rural rate is increased by 19 per cent.

Obviously, the increase in hospitalization of maternity cases, with the result that many births are recorded in localities of which the mother is not a resident, is becoming so important a factor that official birth rates for urban and rural areas represent the facts very inaccurately and correction for residence is essential to obtain the true birth rates.

Resident Infant Mortality Rates

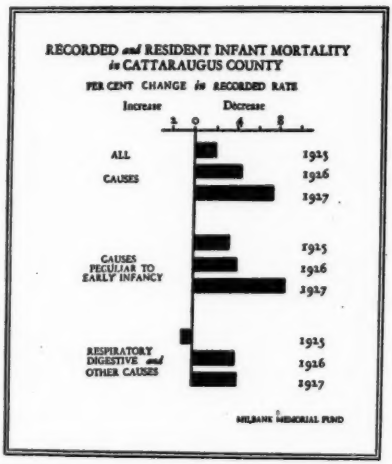
The inclusion in the number of infant deaths officially credited to Cattaraugus County of deaths which occur in the County among the non-resident births and also a certain number of deaths of non-resident infants brought into the County after birth for hospital care has had an adverse effect on the County's infant mortality rate as officially recorded. For the seven years from 1921 to 1927 the death rate among *resident* infants born in the County was computed and with the exception of one year (1925) when the rate was unchanged, the resident rate was lower than the recorded rate. The decrease varied from 2 per cent to 9 per cent, the largest decrease occurring in the year 1927.

For the three years 1925, 1926 and 1927 the names of resident infants were checked against the alphabetical index of all deaths in the State, which is maintained by the Bureau of Vital Statistics, State Department of Health, in order to ascertain the deaths which occurred before the

infant returned to the County. Adding these deaths to all resident deaths recorded in the County and relating the total to the resident births in the County plus the births to residents recorded outside gave an infant death rate for the *total* resident population under one year of age. These resident rates are also lower than the official infant mortality rate in each of the three years and differ only slightly from the rates for resident infants born in the County. The percentage decrease in the infant death rate resulting from the correction for residence is shown in the upper part of Fig. 4.

When the death rate for resident infants under one year of age is divided according to two broad groups of causes, namely (1) causes peculiar to early infancy including deaths from premature birth and all congenital defects and (2) all other causes, which are chiefly respiratory, gastro-intestinal and communicable diseases, the resident infant death rate for "early infancy" causes shows a slightly greater percentage decrease over the officially recorded rate than was found in the total infant death rate. The percentage decrease in the recorded infant rates from each of these two groups of causes in the years 1925, 1926

Fig. 4. The percentage change in the infant mortality rates officially recorded in Cattaraugus County resulting from the exclusion of non-resident births and infant deaths recorded in the County and the inclusion of resident births and infant deaths recorded in adjoining counties in 1925, 1926 and 1927.



and 1927, when they are corrected for residence, is shown in Fig. 4. The mortality during the first week of life among the non-resident infants born in Olean was much higher than among the resident infants; the average death rate in the first week of life for the seven years 1921–1927 was 70 per 1,000 for the non-resident living births compared with 37 per 1,000 among resident births. This difference can undoubtedly be explained by the fact that the non-resident births are a selected group which includes a large proportion of maternity cases for which some complication of confinement was expected. Since the great majority of non-resident infant deaths resulted from some "early infancy" condition, the exclusion of the non-resident infants has a greater effect on the Cattaraugus County rate for these causes than on the rate for all other causes.

Resident Infant Mortality Rates for Urban and Rural Cattaraugus County

Both the urban and rural death rates from all causes are lowered by the correction for residence in most years, the decrease varying from 1 to 13 per cent, but in 1926 the urban rate was increased 4 per cent and the rural rate was decreased 8 per cent by correction, with the result that the difference between the urban and rural infant mortality was materially widened. Although the 1926 result was exceptional, it indicates the unreliability of

Deaths from "early infancy" causes per 1,000 live births in rural and urban Cattaraugus County, 1922-1924 and 1925-1927.

Period	Recorded Rate	Rate Among Residents		Per Cent Change	
		Born in County	Total	Residents Born in County	Total
URBAN					
1922–1924	51.26	49.08	—	−4.2	
1925–1927	50.95	49.08	48.91	−3.7	−4.0
RURAL					
1922–1924	47.07	48.60	—	+3.3	
1925–1927	42.66	41.59	41.42	−2.5	−2.9

comparing the urban and rural parts of the County unless the influence of non-residents is eliminated.

The effect of correcting for non-residents on the infant mortality rate from "early infancy" conditions in the urban and rural sections of the County is shown in the accompanying table. Since the annual rates show very wide fluctuations and the change in the rate resulting from correction for residence also varied widely, the table compares the average rate for the three latest years with the previous three years.

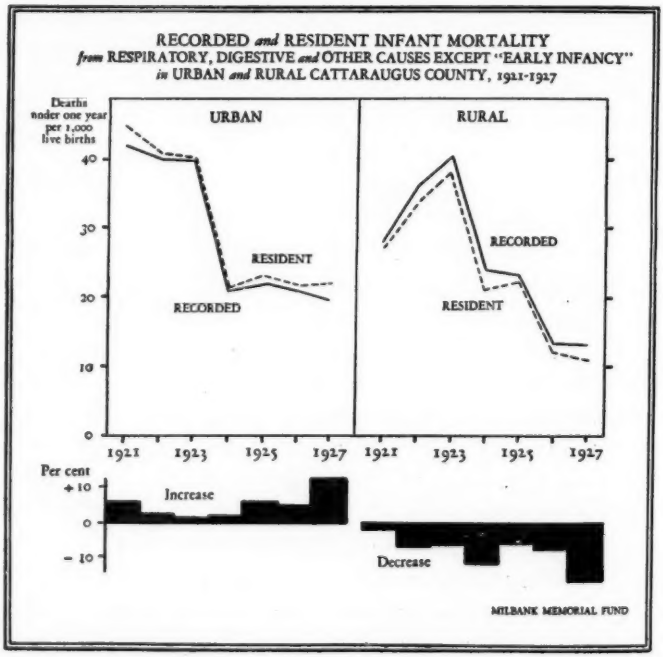
The corrected resident rates for the two areas thus give quite different results from those afforded by the officially recorded rates. In the earlier period, the corrected rural infant death rate from "early infancy" causes is almost identical with the urban rate but the recorded rates show the rural mortality to be 8 per cent lower. A further difference is that the corrected resident rates for the rural area show a greater decline in the infant mortality from "early infancy" causes than is indicated by the recorded rates.

The resident infant urban death rates from respiratory, gastro-intestinal and communicable diseases are from 1 to 13 per cent higher than the registered rates and the difference is more marked in the total resident rate than in the rate for residents born in the County. The opposite is true of the rural death rates from these causes: for the rural section the rates are lower after correction for residence and the total resident rate shows less difference in most years than the rate for residents born in the County. Since the urban rate is increased by correction for residence and the rural rate is lowered the divergence in the mortality rates for the two areas is widened, as is brought out clearly in Fig. 5. The corrected rural infant mortality from communicable, respiratory and gastro-intestinal disease is lower than the urban mortality in every year, whereas the registered mortality

rates were higher in three of the seven years, and in the remaining years the difference between the two is widened.

The results of this study point definitely to a need for *resident* infant mortality rates. An accurate picture of changes in the infant death rates from year to year can be obtained only from resident rates and the comparative mortality from specific causes in different parts of the County is likely to be very unreliable when based on the officially recorded births and deaths under one year of age.

Fig. 5. Infant mortality rates from respiratory, digestive, and communicable diseases and all other causes except causes peculiar to "early infancy" in urban and rural Cattaraugus County as officially recorded, compared with the mortality rates for resident infants and the percentage change in the recorded rates resulting from correction for residence, 1921–1927.



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EDWARD T. DEVINE, PH.D.

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